

REMARKS

The title has been amended. Claims 1-10, 17 and 18 have been amended. Claims 1-10, 17 and 18 are pending. Applicant reserves the right to pursue the original claims and other claims in this and in other applications.

The title stand objected to as being not descriptive. Applicant traverses the objection. The title has been amended to overcome the objection.

Claims 2-10, 17 and 18 stand objected to for informalities. Applicant traverses the objection. The amended claims overcome the objection.

Claim 6 stands rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Applicant traverses the rejection. Pursuant to Examiner's suggestion, claim 6 has been amended to overcome the rejection.

Claim 18 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicant traverses the rejection. Pursuant to Examiner's suggestion, claim 18 has been amended to overcome the rejection.

Claims 1, 2 and 4-6 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,821,160 ("Rodriguez"). Applicant traverses the rejection.

Claim 1 recites a semiconductor apparatus and recites, in part, "an electrode pad including a metal layer and formed over the semiconductor substrate . . . and an analog circuit formed in a region under the electrode pad, said analog circuit formed over the semiconductor substrate and comprising a resistive element including a semiconductor material."

Rodriguez is directed to method of manufacturing a random access memory cell using an etch stop layer. (Rodriguez, Abstract; col. 1, lines 6-9). The Office Action contends that Rodriguez teaches all of the limitations of claim 1. (Office Action, p.4). Applicant respectfully disagrees. Although the Rodriguez device may have a substrate 12, a NMOS transistor and a resistive element 42, it does not disclose "an electrode pad including a metal layer and formed over the semiconductor substrate . . . and an analog circuit formed in a region under the electrode pad, said analog circuit formed over the semiconductor substrate and comprising a resistive element including a semiconductor material." Instead, Rodriguez discloses a metal layer 54 which is etched to form "bond pad areas," (Rodriguez, col. 6, lines 48-53) and a polysilicon layer 42 which may be used to form a thin resistor element. (Rodriguez, col. 5, lines 28-29, 34-36). Rodriguez does not illustrate the "bond pads" in any of the figures. (Rodriguez, col. 6, lines 48-50). Further, the figures do not illustrate whether there is an "analog circuit" containing polysilicon layer 42 beneath the "bond pad areas" of the metal layer 54; Rodriguez merely discloses a polysilicon layer 42, which may be used as a resistive element, over nitride spacers 40. (Rodriguez, FIG. 7; col. 5, lines 25-28).

An advantage of the claimed invention over conventional devices is that by having a resistive element 9 arranged in a region under the electrode pad 31, the area of the semiconductor device is reduced. (paragraph [0080]). Because Rodriguez does not disclose, teach or suggest all of the limitations of claim 1, Applicant respectfully submits that the 35 U.S.C. § 102(b) rejection of independent claim 1 and dependent claims 2 and 4-6 be withdrawn and the claims allowed.

Claims 1-4 and 17 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,369,409 ("Takasu"). Applicant traverses the rejection.

Claim 1 recites a semiconductor apparatus and recites, in part, "an electrode pad including a metal layer and formed over the semiconductor substrate . . . and an analog circuit formed in a region under the electrode pad, said analog circuit formed over the semiconductor substrate and comprising a resistive element including a semiconductor material."

Takasu is directed to a semiconductor device having a bleeder resistance circuit and a method of making the device. (Takasu, Abstract; col. 1, lines 5-8). The Office Action contends that Takasu teaches all of the limitations of claim 1. (Office Action, p.5). Applicant respectfully disagrees. Although the Takasu device may have a substrate 801, a N-type transistor and a resistive element 807, it does not disclose "an electrode pad including a metal layer and formed over the semiconductor substrate . . . and an analog circuit formed in a region under the electrode pad, said analog circuit formed over the semiconductor substrate and comprising a resistive element including a semiconductor material." Instead, Takasu discloses an aluminum layer 814 which is deposited by a sputtering method over an intermediate insulating film 812, (Takasu, FIGS. 12E-F, col. 9, lines 38-50) and polysilicon resistors 802. (Takasu, col. 9, lines 28-52). Takasu does not illustrate "bond pads" in any of the figures. Further, the figures do not illustrate whether there is an "analog circuit" beneath the "bond pads." Because Takasu does not disclose, teach or suggest all of the limitations of claim 1, Applicant respectfully submits that the 35 U.S.C. § 102(b) rejection of independent claim 1 and dependent claims 2-4 and 17 be withdrawn and the claims allowed.

Claim 7 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Rodriguez in view of U.S. Publication No. 2002/0063262 ("Matsuzaki"). Applicant traverses the rejection.

Claim 7 ultimately depends from claim 1 and thus, includes the limitations of claim 1. As such, claim 7 recites, in part, "an electrode pad including a metal layer and formed over the semiconductor substrate . . . and an analog circuit formed in a region under the electrode pad, said analog circuit formed over the semiconductor substrate and comprising a resistive element including a semiconductor material." As mentioned earlier, Rodriguez fails to teach these limitations. Matsuzaki does not cure the deficiencies of Rodriguez. The Office Action relies on Matsuzaki to teach a rerouting layer formed in a region above the fuse element and an external connection terminal formed on the rerouting layer in a region different from a formation region of the electrode pad. (Office Action, p.7). Because cited references, individually or in combination, fail to teach or suggest all of the elements of claim 7, Applicant respectfully requests the 35 U.S.C. § 103(a) rejection be withdrawn and claim 7 allowed.

Claims 8-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Rodriguez in view of U.S. Patent No. 6,232,823 ("Tsuchida"). Applicant traverses the rejection.

Claims 8-10 ultimately depend from claim 1 and thus, include the limitations of claim 1. As such, claims 8-10 recite, in part, "an electrode pad including a metal layer and formed over the semiconductor substrate . . . and an analog circuit formed in a region under the electrode pad, said analog circuit formed over the semiconductor substrate and comprising a resistive element including a semiconductor material." As mentioned earlier, Rodriguez fails to teach these limitations. Tsuchida does not cure the deficiencies of Rodriguez. The Office Action relies on Tsuchida to teach the additional limitations of claims 8-10. (Office Action, pp.8-9). Because cited references, individually or in combination, fail to teach or suggest all of the elements of claims 8-10, Applicant respectfully requests the 35 U.S.C. § 103(a) rejection be withdrawn and the claims allowed.

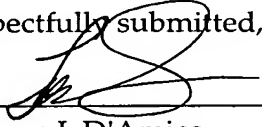
Claim 18 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Rodriguez in view of U.S. Patent No. 5,107,313 ("Kohda"). Applicant traverses the rejection.

Claim 18 ultimately depends from claim 1 and thus, includes the limitations of claim 1. As such, claim 18 recites, in part, "an electrode pad including a metal layer and formed over the semiconductor substrate . . . and an analog circuit formed in a region under the electrode pad, said analog circuit formed over the semiconductor substrate and comprising a resistive element including a semiconductor material." As mentioned earlier, Rodriguez fails to teach these limitations. Kohda does not cure the deficiencies of Rodriguez. The Office Action relies on Kohda to teach gate electrode having lengthwise ends which are bent in an upward direction towards said electrode pad. (Office Action, p.10). Because cited references, individually or in combination, fail to teach or suggest all of the elements of claim 18, Applicant respectfully requests the 35 U.S.C. § 103(a) rejection be withdrawn and the claim allowed.

In view of the above amendment, Applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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